INEEL PUBLIC MEETING ON PROPOSED CLEANUP PLAN FOR IDAHO CHEMICAL PROCESSING PLANT (INTEC)

MOSCOW, IDAHO

Thursday, November 19, 1998

Nancy Schwartz Reporting
2421 Anderson Street
Boise, Idaho 83702
208-345-2773
Fax 208-424-1231
e-mail NSchw208.aol.com

PUBLIC COMMENT

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MOSCOW, IDAHO, THURSDAY, NOVEMBER 19, 1998

MR. SIMPSON: Chuck, as you know, I'm Erik Simpson, the INEEL community relations plan coordinator for the Environmental Restoration Program. And I'm going to facilitate the meeting -- or I should probably call it a gathering at this point. We're going to discuss with you a project that I know you have a great deal of interest in. It's the Waste Area Group 3, Remedial Investigation Feasibility Study and the subsequent proposed plan. And I'm sure you're keeping track at this point. This is the fifth facility-wide environmental investigation that we've completed at the INEEL, and we have four more to go under our Federal Facility Agreement and Consent Order.

Since this project is probably the most complex that we've encountered so far, DOE, EPA, and the state have agreed to extend the comment period an additional 30 days, and it will end December 22nd.

A little bit of background, the last time that we were here was in February when we were discussing the results of the Remedial

Investigation Feasibility Study for the Test Area North facility. And at the request of some stakeholders and also our Citizens' Advisory Board, we revised that document, and it's going to be rereleased shortly for another comment period.

MR. BROSCIOUS: This is a new proposed plan?

MR. SIMPSON: Yes. We have several supporting documents here tonight. We have, of course, the proposed plan, we have some update fact sheets, community relations plan, even Superfund guidance documents we have.

I'm not sure if you have a copy of the agenda, Chuck. But what we're going to do -- I don't know, do you want to keep it formal?

MR. BROSCIOUS: I would go through so Chuck gets information that we're here to present. I think talking as if Chuck is a multitude of people probably makes a little sense.

MR. SIMPSON: Okay. What we're going to do tonight is give the presentation as we have in Idaho, Twin Falls, and Boise. And then we'll have a Q and A session, questions and answers after that just to help with the flow.

MR. BROSCIOUS: Just for background,

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what is the status of Argonne and NRF?
MR. SIMPSON: Those were RODs signed on September 29th by all agencies. They are working on the scope of work at this time. Argonne has their preliminary results back on their Phyto Remediation Study.
Following the Q and A, we will have the public comment portion of the meeting where your comments will be entered into the record, and Nancy is recording all portions of this meeting, and it will be available in a transcript.
Also, I have a tape recorder here tonight, if would you like to record comments that way. And, also, you can submit your comments in writing. I have postage-paid comment forms around the room. Then, also, we have comment forms in the back of the proposed plan.
At this time I will introduce the people that you have been talking to who will give the presentation. With the U.S. Environmental Protection Agency, Region 10 office in Seattle, Wayne Pierre. Wayne will discuss, basically, an overview of the project. And we'll talk about the Tank Farm soils. With the Department of Energy Idaho Operations Office, Talley Jenkins. We'll

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talk about the soils under buildings and structures, other surface soils, the SFE 20 tank system buried gas cylinders. And Scott Reno with the State of Idaho Department of Health and Welfare, Division of Environmental Quality. And Scott has also been instrumental in drafting the proposed plan and has also been instrumental during the investigation itself and he will discuss the perched water and the Snake Rive Plain Aquifer.
So at this time we'll go through the presentation with you.
MR. PIERRE: Again, Chuck.
MR. BROSCIOUS: At what point will there be any discussion about the soil repository?
MR. PIERRE: For Group 3 there will a discussion on the soil repository.
Well, I believe you're familiar with INEEL, 890 square miles. There are nine facility locations, and the miscellaneous sites and the general areas referred to as Waste Area Group 10.
As Erik mentioned, we have decisions, comprehensive decisions made on WAG 8. On Waste Area Group 9, on Waste Area Group 2. This is a fairly comprehensive decision being made on Waste Area Group 3. And Erik also mentioned that Test

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Area North comprehensive is the comment period hopefully we will be starting next week. And any questions that you have, just please feel to interrupt me.
We're here because we are seeking your input. It costs a lot of money because we're dealing with radioactive waste. Radioactive waste is expensive. Its toxicity is orders of magnitude, lower concentrations have health effects versus chemicals. We have a statutory obligation to make our decisions after we have public input, not before. We do need public input in order to make better decisions. And some people believe the proposed plan is complicated. Some people believe it's not complicated enough. So it's always a debate. It's 50 some-odd pages because there is a lot to be discussed.
The Chem Plant started operations around '52. As you know, it's got a number of designations: Waste Area Group 3, Idaho Chemical Processing Plant, Idaho Nuclear Technology and Engineering Center.
The major concerns at Waste Area Group 3, the Chem Plant, are the spills that have occurred from the '50s. A lot of these spills,

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especially in the Tank Farm area we will talk about, are the results of managing and transfer of acids.
INEEL is, since 1989, on the National Priority List and the Federal Facility Agreement and Consent Order is the method that we use or the document that we use to coordinate and clean up activities at INEEL for past practices.
Do you have a copy of the proposed plan with you?
MR. BROSCIOUS: Yep.
MR PIERRE: Wayne, on Table 11 is a summary of the groups that we have and the preferred alternative. Of the 95 sites we evaluated, 40 were determined to pose a significant risk. The others, four were identified as requiring other action to regulatory programs, and 41 sites were proposed for No Further Action.
EPA's risk assessment process is the way we identify what is an acceptable risk. A risk assessment process is a national process. And we evaluate a baseline risk. That means that if there are no controls in place, what would the risk be to human health, the environment. For human health, what would the risk be to current use and future

use of the facility?

For future use we use the 100-year scenario, which means that we believe that government control could be lost within 100 years and that property could be used if we were to do nothing. And, basically, the baseline risk scenario, if we did nothing, government property could be available to the private sector and we would have residential development. The risk that we use, the basis for making decisions at INEL, is a 1 in 10,000 carcinogenic risk.

Once we've identified that there is a nonacceptable risk, the next step is to do a feasibility study. A feasibility study is also a tiered approach. We first need to identify what our objectives are. In other words, how do we take that unacceptable risk and address it in such a way that the risk would become acceptable. Once an alternative is implemented, we identify alternatives that have the ability to achieve those objectives. We evaluate those alternatives against our criteria base and then we evaluate between the alternatives against the criteria base to identify what we believe to be the best alternative.

The criteria that we use, the nine

criteria is also referred to in order of how we implement those criteria or the threshold. We must pass threshold criteria. Obviously, we have to have an acceptable risk. And we must obey the law. The balancing criteria allows us to do a technical evaluation of alternatives and identifies the most cost effective using those balancing criteria.

After we're done, then we have, as you can see in the proposed plan, a preferred alternative. We then seek what is called the modifying criteria. We then look for stakeholder and community input to either identify flaws in our logic or to identify other alternatives to modify alternatives that we have.

Implementation of this process is the Tank Farm. As mentioned before, the Chem Plant started operations in '52. The Tank Farm consists of 20 tanks ranging in size from 18,000 gallons up to 300,000. There are 11 300,000 gallon tanks. These tanks I will show in the next slide.

This shows a picture of the tanks when they were first constructed. Can you see that okay? You've probably seen this before. Up here you can see the ground level. These tanks sit 10

feet below -- the top of the tanks are 10 feet below grade. The tanks were, basically, constructed on the basalt, on the bedrock. The Tank farm is located here. The stack, the point of reference is located over there.

MR. BROSCIOUS: I've seen a number of statements about the 20 tanks. And I have never seen a complete list of each one of those. I got up to about 17 or 18.

MR. PIERRE: Depending on the documents.

MR. BROSCIOUS: I would love to know where the other two or three are.

MR. PIERRE: There are two vaults with two tanks in them, and that's how you wind up getting to the 22.

MR. JENKINS: There are the 11 300,000 tanks. There are four 30,000 gallon tanks. The four 300,000s are over here. The 300,000s are in this area. And underneath the backside of 604 there is five 18,000 gallon tanks.

The 30,000s are up here. And in the back side, here, are the five 18,000.

MR. PIERRE: But if you look at the land-use plan in other documents, you will see the

numbers range from 18 to 20 so you will see 18, 19, and 20 are the numbers because of counting.

Talley has got the full numbers of tanks addressed.

MR. BROSCIOUS: Are those under 604?

MR. JENKINS: They are the vaults in the backside of 604.

MR. BROSCIOUS: In the building?

MR. JENKINS: Yes.

MR. BROSCIOUS: Those are the 30,000?

MR. JENKINS: 18,000.

MR. BROSCIOUS: 18-.

MR. PIERRE: As far as the Tank Farm soils, what we do know, we know that there is at least 146,000 cubic yards of contaminated soil in the Tank Farm. We know that we've seen a report of radiation fields up to 400 rem. We know that the activities of cesium, strontium-90, plutonium are very high. The plutonium activity is such that, at least based on some of the data, that it may qualify as TRU waste.

MR. BROSCIOUS: It may?

MR. PIERRE: Well, because you would take not one data point, you would take whatever, if you dug it up, you would take statistical

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sampling and determine it at that point. This means that there is reason to believe that it will be TRU waste. What it looks like when you've actually accumulated and packaged it is whatever it measures. That's what I meant.

We know that by doing nothing that the Tank Farm soils continuing to have run off and precipitation and the contaminants in the Tank Farm soils are being leached to the perk aquifer and on to the Snake Rive Plain Aquifer.

We don't have good knowledge at this time as far as the specific closure of the tanks, how that will be achieved. We also have questions as far as our modeling of the plutonium migration, potential oxidation state of plutonium, and that we're looking to correct that through additional investigation work under a new operable unit called 314.

As far as spills, spills occur all the time. Until we complete excavation or whatever remedial action is necessary here, we will probably never have a good handle on the spills because, again, we're working with hydrofluoric and nitric acid. There will always be future spills until the operation ceases.

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MR. BROSCIOUS: Some of the attempts to try to -- I guess it was of the spills where they -- in the RI/FS they took the graphnite sampling from the time of the spill that was going into that tank or the service line that was going into that tank to try to figure out to do some kind of analytical characterization of the soils, based on what was in the service line that leaked at the time.

MR. PIERRE: Right.

MR. BROSCIOUS: My point is -- this might sound strange, but it was very clear that those particular tanks, it said right in there that it was first and second cycle graphnite that leaked. Right?

Okay. Those are the same tanks that are listed as the sodium-bearing tanks that DOE would like to say isn't really high-level waste but, you know, it's one of those things. But I think that is clear proof to me that it is absolutely high-level waste.

MR. PIERRE: RI/FS discusses at least three of the 11 spills in the Tank Farm to be of high-level waste, so this is on the soils. For this purpose, we are not debating that the soils

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would qualify as high-level waste. As far as whether or not the sodium-bearing waste qualifies as high level is really outside the scope of our ability.

I don't know if anyone in the audience wants to address that, but we are not addressing that issue.

MR. RENO: We can talk about the Site 28 release, when you talk about the --

MR. BROSCIOUS: 28, 31.

MR. PIERRE: 79.

MR. RENO: That was Tank 183, was associated with that one?

MR. BROSCIOUS: It's 183 all the way up to 186.

MR. PIERRE: For our purposes, all I'm saying is that our documentation says that three of the 11 source areas was releases of high-level waste. And I don't -- at this point in time, for this project, I don't know if we need to say more than that. That is what our document said.

MR. BROSCIOUS: I appreciate that, and I won't push the issue, but I wanted to bring it up inasmuch as we have an audience of people that will be looking at that sometime real soon. But the

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argument that we're hearing in the preliminary documentation is the denial that sodium-bearing waste is high-level waste and doesn't have to be dealt with accordingly.

MR. PIERRE: I understand that. And the point, though, here is that you touched on one of the subjects. Until there is a consensus position on what to do about the closure of the tanks, it is difficult to try to make a decision on what is happening to the sides of those tanks, obviously. So we are attempting to try to find a coordination and to make sure that everybody is on the same playing field. The first document that is going to come out would be the EIS, which I think is about year 2000. The next thing that Kathleen Trevor has already stated to the CAB this week, which was obvious, that is, that the EIS doesn't make a decision on these tanks. The closure is the next step. In other words, in the Governor's agreement are documents that would help in making the decision on how the tanks and high-level waste are managed. There is a whole bunch of coordination that needs to be done.

The only part that we're addressing under the Chem Plant Federal Facility Agreement and

Consent Order clean up are the soils. And we're not addressing the contents of the tanks or the tanks themselves. Those tanks are -- there is no debate that those tanks are subject to the Hazardous Waste Management Act. So, if nothing else, they do need to go through the closure procedures of the Hazardous Waste Management Act.

MR. BROSCIOUS: The one thing that this plan, even as it -- it doesn't -- obviously, it's shunting this whole Tank Farm soil thing off, but it should have acknowledged the fact that those soils are either high-level waste or they are transuranic waste, and it doesn't do that.

MR. PIERRE: It gives a number. That number is plainly transuranic, the 290, for example. The previous -- 276, sorry. The 276 nanocuries per gram number that I showed you, that is 176 nanocuries higher than being TRU. If that soil and that location was excavated, it would be TRU.

MR. BROSCIOUS: But that number is not in here.

MR. PIERRE: The numbers are in the documents.

MR. BROSCIOUS: Yeah, but it's not in

here. It should be in here.

MR. PIERRE: If we were picking it up, that number becomes important. But we're not picking it up in this action. And I need to identify, as you know, this is an interim action that we're looking at. The reason that we're looking at it as an interim action, as I mentioned, was because we don't have all the knowledge that we need. We don't have the plutonium migration numbers. We don't have the closure issue resolved, and Scott may be right. I think he's checking. I seem to remember there may have been something, but I don't know if it was in the proposed plan or the RI/FS, but there was a reference someplace in one of the documents that it's being qualified as TRU.

So because we don't have enough answers for what to do with the Tank Farm soils, we're not proposing a final action at this time. We are proposing to take some action. The action that is listed, the objectives we want to achieve are to protect the drinking water aquifer, prevent worker contact with the contaminated soils, and, as I mentioned, through an operable unit designated 3-14, we hope to collect more information.

MR. BROSCIOUS: The thing that bothers

me, that all sounds very good and sincere and righteous and all that kind of thing, but this plan when it addresses the SFE 20 tank, again, you've got content in that tank that, clearly, it meets the TRU definition. Alternative 4 has some vague statements about the sludge will be drummed and disposed of either on site or in a suitable engineered facility.

I mean, there clearly is no commitment to really abide by the statutory requirements of that category of waste. And I'm worried that if you won't address it in the SFE 20 tank, you're not likely to do it in the tank soils.

MR. PIERRE: Last night Pam --

MR. BROSCIOUS: We'll get to that eventually down the road, but your decisions now --

MR. PIERRE: You're hearing me put something on the record, which I did last night. And that is as stated last night, if the sludge or materials that comes out of the SFE 20, which will be discussed later by Talley, exceeds 100 nanocuries per gram on the confidence level required, which I believe is 95 confidence level, which is not 100 and someplaces it may be 60 nanocuries per gram, that material will be managed

as TRU.

Also stated last night to Fritz that if this material exceeds 10 nanocuries per gram, it is not going on any land fill on INEEL that we have any control over under the CERCLA program. That the material, if it comes into the category of either orphan or TRU waste would either wind up -- well, not either, right now would probably have to go to BNFL, which would be the only place that they can take it.

So there is -- and someone asked, "Would this material go into ICDF?" And the answer was a noncategorical no if it had those kind of TRU concentrations.

So I would ask if you could wait until Talley discusses the SFE 20 tank. But all you're hearing from me on the issue of the Tank Farm soils is that a number of the issues that you're concerned about would come into play if we had an alternative that said excavate. But for the issue of the soils in place, what we're trying to do is to address the risks posed. The risks that are posed are the radiation field and the contaminate leaching for the Snake River Plain Aquifer. That is why you're not hearing the issues of, is the

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material the TRU, because if we don't dig it up, it's really not a question, and you're not hearing the issue of, is it high-level waste or not. Because, again, if we're not digging it up, packaging it, and having to decide what the ultimate management of it is going to be, we don't really answer those questions at this time. What we're trying to answer is how do we find an acceptable residual risk for protection of the aquifer, for protection of workers, that is all this interim action is limited to. That is why, not because of any other reason. And as I said, what I just said about the TRU content I said last night when Pam brought it up from the Snake River Alliance.

So there is no attempt to try to play games or there is no attempt to try to sneak things into the ICDF. What is going to go into the ICDF, as Talley will talk about, not me, is going to be quite limited because of the objectives that we need to achieve on the ICDF.

Do you want me to keep going?

MR. BROSCIOUS: The problem is that, can we hold you to your word what you tell us verbally when it's not in basic documentation that we could

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come back and cite.

MR. PIERRE: Peter Rickards -- as far as people who come back to the public transcript and cite -- I'm a project manager for EPA; I won't sign a document if it doesn't come out the way I'm saying, and I keep my word.

MR. BROSCIOUS: Okay.

MR. PIERRE: The objective, as I mentioned a minute ago, is to protect the drinking water aquifer, prevent worker contact with contaminated soils, and collect more information.

The alternatives that we are looking at is No Action, which is a base alternative. The second alternative -- and the reason why these alternatives, like Alternative 2, passes threshold in this case is because it's an interim action, is institutional controls.

Now, the difference between Alternative 1 and 2 if you read into the proposed plan, it's difficult to see that there is a difference. The difference really has to do with, one, something is happening because someone else wants it to happen or, two, something is happening because we say it must happen. That is the major difference between the two.

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Alternative 3 is to attempt action such as to achieve a goal -- somewhere in the neighborhood of -- or at least the goal would be an 80 percent reduction in the infiltration into the Tank Farm soils. To achieve a number like that, it's going to require regrading of the area. It's going to require surface sealing techniques. It's going to require relocation or redirection of drains from the roofs.

Looking at the alternatives and which alternative best meets the objectives that you saw on the previous overhead, Alternative 3 is our preferred alternative. This alternative, again, is an interim action. The life expectancy of approximately six years to run until we collect enough information to make a final and defensible decision on the Tank Farm soils after we collect the information from Operable Unit 314.

With that, I would like to ask you if you have any questions.

MR. BROSCIOUS: Part of what you're hoping to do is to reduce a recharge to the perched water. And the thing that strikes me that, you know, it kind of comes to the heart to the DOE's commitment to really do the right thing and deal

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with the mistakes of the past. One of the things clearly on that list of recharges is the perc pond being the biggest one. Am I correct? It's like over 90 percent or something like that?

MR. PIERRE: The perc ponds represent a large amount of water. And, Scott, one of the things I don't want you to do, if you wouldn't mind, I don't want to preempt what Talley and Scott are going to say in their presentation. I could suggest if you would like to leap forward so you can then frame your question better. But in that package you will find information concerning the complication of perc pond.

MR. BROSCIOUS: Whatever. But the point I want to make is, it's just absolutely unconscionable that the perc ponds are still in use today. You've known about this for years and years and years, and yet they're still in use today. There has been no effort on their own part to take the initiative, recognizing the problem and establish new-lined evaporation ponds that would, at least between now and when there is a decision made. I mean, they know as long as they've got a functioning facility there that's going to be generating process waste, that they've got to

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manage it somehow. And they know that the perc ponds have got to be taken out of service, but, you know, it's like there is no conscience there.

MR. PIERRE: There are multiple components to what you're saying. One has to do with "they" being DOE. DOE yesterday and DOE today is one aspect. Another is DOE operations versus DOE Environmental restoration. The proposed plan that you see before you are the three agencies' proposed plan. It's not state and EPA proposed plan that DOE is being forced to live with. DOE is more than supportive and created the proposed plan.

So what you're seeing is a commitment today do to something about this problem. As far as the commitment yesteryear, obviously, DOE-ID is not alone in this. If there was hindsight -- I don't even want to say that. The concept that the area is the government and it will always be the government and that one can use the aquifer to allow contaminants to degrade or dilute was a premise that occurred in the '50s up to the '80s.

It was, as you know, the Leaf versus Hodel, I think a court trial where DOE came to the recognition with persuasion that they had to comply

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with laws. And at that point, then, for the injection wells, as you also know, those injection wells were land disposal units and were closed up. CPP-23, which is the injection well at the Chem Plant, went through hazardous waste closure. That first came into existence under the Consent Order and Compliance Agreement and then that Consent Order and Compliance Agreement split into Facility and Consent Order and the other part split into the program for the compliance part. So, I mean, I don't think --

MR. BROSCIOUS: If that were true --

MR. PIERRE: Let me finish.

MR. BROSCIOUS: If that were true, why is the plan to replace the present perc ponds, what is called a like for like, are additional perc ponds that are just off the plume. I mean, why is there not a commitment to put in fully compliant, lined reevaporation ponds to not perpetuate this land discharge?

MR. PIERRE: Again, I'm only going to talk general because this is really Scott's field. I want us to try to get through the process. But one of the things that you have to take into consideration is that there are existing permanent

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programs whose job it is to protect the receptors.

So, if for example, DOE was to go to a new percolation pond, their discharge numbers in that percolation pond have to meet environmental and health criteria. If they were to discharge to the Big Lost River, any kind of permit to do that would have to meet water-quality criteria at the points of discharge. If they were to evaluate material, they would have to meet the Toxic Air Pollutant and other air standards.

The track is that the concept that we're attempting to work with is the past practices when, for whatever reason, one wants to assign to the people at that time, they didn't do what we think is acceptable today. But we have existing laws and the concept of the clean up that we're doing is to address the past practices. And we assume whether you believe it's a good assumption or not, but we assume that the current laws that are on the book are protective enough to ensure that future operations will not have the impact. A big problem with the perc ponds today is that they provide a phenomenal amount of water to deal with the contaminants that are already there.

If you'll forgive me, I don't want to go

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more because this is really Scott's part.

MR. RENO: I don't mind if you address it, but I will pick this up again later.

MR. SIMPSON: Next up is Talley.

MR. JENKINS: Soils under the buildings, this consists of four sites. One located under the 603 Complex on the dry side. This was an the old French drain used to dispose of basin research water.

It was used from '52 to about 1968, at which time it was taken out of service. The area was excavated and we constructed the dry storage facility over the top of that area.

604/605, we have two sites beneath this one. One was a site where liquid was discovered underneath with stainless-lined hot cells. We're not sure if it leaked to the environment, but we listed it as a site.

The other one, was we found soil during an excavation to establish a fire egress tunnel out of the basement of that facility. We came across contaminated soil.

And the fourth one is a site beneath 601. This is a steel line that corroded away and released radioactively contaminated liquids to the

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soil.
MR. BROSCIOUS: Did the French drain go beyond the dry fuel storage part of 603?
MR. JENKINS: No, it was all underneath that, this one piece.
MR. BROSCIOUS: It was a pretty short French drain.
MR. JENKINS: Yes, it was. What we don't about that group of sites is we don't know what the D&D action -- or the D&D of these facilities will be. However, we do believe that the current structure acts as a functional cap, but we don't think that that's adequate for the long-term solution.
Based on this, the agencies feel that a deferred remedial action is warranted. This will allow us to protect the aquifer. In addition, it would allow us to protector the workers and the general public in the future.
For this group of sites, we looked at three alternatives. The first one, No Action for comparison purposes. The second one being a containment. This would consist of constructing a multilayered-engineered cap over each of these release sites.

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And the third one being the removal, treatment, and disposal. This one is actually contingent upon the structure being removed. If the structure was not removed, we're essentially talking about Alternative 2.
MR. BROSCIOUS: When you talk about removing the structure, are you talking about the superstructure or the entire subsurface and everything?
MR. JENKINS: The whole thing. Based on this, the agencies' preferred alternative is 2.
Other surface soils. This group of sites consists of about 20 individual release sites. These consisted of things such as inadvertent spills, leaks of radioactive liquid waste, decontamination solutions, spent fuel storage water, storage of radioactive contaminated equipment, atmospheric releases, other plant waste water, and boxes of contaminated soils from various projects conducted at the Chem Plant.
What we do know is that these contaminated soils are basically contaminated by radionuclides. There are a few of them that present an ecologic risk from metals such as mercury or chrome or lead.

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The contamination is generally in the upper couple of feet, however, some sites have contamination all the way down to the soil/basalt interface, which occurs at roughly 40 feet.
We know that there is about 82,000-cubic yards, but we don't have a real good handle on the horizontal or vertical extent. In that when we did our investigation, we focused on assessing the risk at the hot spots, not necessarily defining the aerial extent or the extent. As a result that leads to an uncertainty in the volume estimate. In addition -- go ahead.
MR. BROSCIOUS: That is one of the big things. Again, your plan calls for 10 feet excavation.
MR. JENKINS: I'll get to that one. In addition, we do know that there is contamination beneath 10 feet. Some of these sites may have concentrations of contaminants that would present an unacceptable groundwater risk due to the leachability of the constituents. If this is the case, we would excavate the soils to a depth where that no longer becomes a concern.
Based on this, the agencies believe remedial action is warranted. This would allow us

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to protect the aquifer and to prevent exposure to both current and future workers as a potential residence.
We looked at five alternatives. Again, the No Action for comparison purposes. Alternative 2 is adding additional controls. Land restrictions, potentially additional administrative requirements.
Alternative 3 would consist of placing a multilayered engineered barrier over each of the individual release sites. Alternatives 4A and 4B are removal and disposal. In case of 4A, this is removal and disposal on site. The on-site disposal would consist of constructing an engineered disposal facility that would meet the requirements of a RCRA subtitle C facility and be closed with a multilayered engineered cap. This is what we're referring to as the soil's repository.
Alternative 4B, basically excavate and treat an off-site disposal. For cost and evaluation purposes, we used an off-site commercial disposal facility.
Based on these factors, the agencies' preferred alternative is 4A.
Did you have a question, Chuck, on

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this?

MR. BROSCIOUS: Well, again, it comes back to the kind of thing I was talking with Wayne about earlier, it's the same scenario but a different subject. You know, in your plan you say 10 feet. That just raises all kinds of red flags. But this is the only thing that we've got to go on.

Again, you can come around and tell us all kinds of things and maybe I'll take the trouble and look at Nancy's transcripts and try to hold you to your commitment or even your overheads, which I'm not sure actually would be of that much use. If I feel a need to hold you to that verbal commitment that you will go to whatever depth, within reason, to remove that contamination so that it will meet your legal requirements.

MR. PIERRE: One of the things, Chuck -- and maybe this is where the disconnect is, is that our requirement is to achieve an acceptable risk. The 10 feet has to do with our belief that the site may be used within a hundred years for future residential. For those sites that are just contaminants that don't pose a threat to groundwater, we would not excavate to 10 feet. So

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what you're seeing is what is called the basement scenario. That is where the 10 feet comes from. The additional concern that Talley is talking about relates to sites where there may be other contaminants, for example, strontium-90 and that the concentration would be such as to pose a threat to the groundwater. So we would not excavate below 10 feet just because the contamination is there. We would only excavate because of some future scenario that we are trying to protect. And so to give you the straight scoop, the 10 feet is the basement scenario. You'll see the Washington State Department of Ecology, if you want an use the Hanford scenario, uses 15 feet, but the EPA national guidance has 10 feet as the excavations. Any deeper excavation relates to protecting groundwater resources.

MR. RENO: A couple other things. The 15 feet at Hanford is, I believe, is for their MTCA.

MR. PIERRE: MTCA is control ROD. And the reason -- Model Toxics Control Act. And for your knowledge, the reason it's 15, is when the Model Toxics Control Act was written, that was the EPA Region 10 guidance. So they just copied our

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guidance. That was superceded by national guidance that gave the 10 foot. And 10 feet -- for anyone who's put in a basement is very conservative, because you don't put basement on disturbed soil. Most people don't have fallout shelter basements. Basements are about seven feet.

MR. RENO: If I may, you said initially the only reason we would do that --

MR. PIERRE: Groundwater protection. We would dig deeper than the basement scenario.

MR. RENO: That's right. Then to answer your question, Chuck. I'm worth the commitment. It's in the proposed plan, the remedial action that these criteria that we're seeking to be protective at, and that will be memorialized in the Record of Decision as well.

MR. PIERRE: The other thing that is happening, too -- as far as where is the traceability, your question on traceability, we have a responsiveness summary that identifies comments and how we're responding. Whether or not the response is agreeable to the questioner, there is the traceability as far as, here was the question, here was the response. And for some of the issues that you mention, I think we can -- I

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don't know anything other than to say we promise. But for this issue, just to make sure there isn't a misunderstanding, our objective here is to take an unacceptable risk, which is based on a hypothetical future scenario, and to make the risk acceptable. That is what we are attempting to achieve.

MR. JENKINS: Any other questions on this one? The next group I'm going to talk about is the SFE 20 tank. This was a tank that was used from 1957 until 1976 to receive decontamination solutions from the receiving area, deacon pad, deacon solutions from the fuel element cutting facility and other radioactive liquid wastes from the 603 complex.

These were transferred into the SFE 20 tank, and eventually sent north to the PEW system for treatment. In 1976, recut and cap the line essentially abandoning the facility in place. The tank is at a depth of greater than 10 feet below the surface. The top of the vault is a little over 10 feet below ground. What we know is that the contents of the tank, about 400 gallons of liquid and 55 gallon of sludge, have very, very high levels of radionuclide contamination.

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We also know that if we don't do anything eventually the tank will give way and the contents will leak to the vault and eventually into the surrounding environment.

What we don't know is the actual concentrations of contaminants, in that we have one sampling event from 1984 and that it had concentrations for various constituents.

Based on this, the agencies believe remedial action is warranted. This is to protect the aquifer. For this group we looked at four alternatives. Again, No Action for comparison purposes. Alternative 2 would essentially open the tank, the tank vault up and start filling the tank, the tank vault and the surrounding structure with concrete, i.e., grouting it in place.

Alternative 3 is very similar to Alternative 2, with the exception that we would remove and treat the liquid prior to grouting up the facility.

Alternative 4 would involve the removal and treatment of the liquid. Removal, treatment, and disposal of the sludge and removal and disposal of the associated structure tank vault and piping.

Based on these, the agencies' preferred

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is Alternative 4.

Chuck, do you have a question?

MR. BROSCIOUS: Well, the big "if" is where is it going to go?

MR. JENKINS: The sludge?

MR. PIERRE: And the water?

MR. BROSCIOUS: The whole business -- I mean, you look at the sampling data even for the vault liquid, vault sediments, tank pit sediments. I mean, it's awesome stuff. You're looking at really severe contamination.

The point is, like I mentioned earlier, it doesn't seem to be a commitment to recognize that even the sediments are TRU waste and it has to go to a TRU repository. You even suggested it might be on site. There is just not the kind of candor about the extent of what the problem is there and to lay it out.

MR. JENKINS: If the sludge had concentrations greater than 10 nanocuries and less then 100, it would require some kind of treatments prior to disposal in the repository.

MR. BROSCIOUS: But you have an obligation to --

MR. JENKINS: Hold on.

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MR. BROSCIOUS: You wonder why people don't trust you because you're not coming out and saying, "We have sample data that maybe it goes back to 1980," or whatever, "but it indicates that it meets transuranic definitions because of dada, dada, dada. We need to go in and do some more sampling, but this is what we know now." But you're trivializing the whole problem. People don't even have a clue because you're not telling them.

MR. PIERRE: I don't think that we're trivializing it. I think that where the disagreement, if there is any, is that you're saying that from the database that we have, this is it, this is TRU. We are saying and admitting that the database that we have stinks, and that once that material comes up that you heard Talley say and what the obligation that we have is, like hazardous waste, once you pull it out of the ground, you then trigger all of the requirements. If it's greater than 10 and less than 100, based on confidence level, it must go to a treatment facility. The only one around, hopefully, at that time would be the mixed waste, advanced mix wastes treatment facility. If it's greater than 100, it

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is not going on INEEL. This waste would be CERCLA waste. The only way you would ever go into ICDF is it would have to be less than 10 nanocuries per gram. That is the only way it could ever go in ICDF. We don't know that the stuff is greater than or less than. We know that there is data points that suggest -- the same in the Tank Farm soils -- there are data points that suggest this stuff is loaded. There is a good probability that the stuff will fall into TRU.

MR. BROSCIOUS: You have an obligation to at least share what limited information you have because the normal guy on the street is going to look at this plan and say, "Why the heck are you spending millions of dollars looking at this situation?"

MR. PIERRE: The argument that you're making is that we should have put that in the proposed plan.

MR. BROSCIOUS: Right.

MR. PIERRE: I am saying, as I pointed out on this page, that we do have information that we're putting into the RI/FS, as far as the TRU part that came out of the SF supplement.

So I don't know a way to answer the

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question as far as we've already mentioned to you that there are differing opinions as far as how complicated this proposed plan is now. I don't have a good answer for you, but I am saying that the administration is not hiding the fact of the contaminant loading based on the analysis that we have. We're not hiding that. Whether or not we spent the extra time or went the extra foot or whatever you want to call it, in that proposed plan --

MR. BROSCIOUS: Two lines.

MR. PIERRE: You're right.

MR. BROSCIOUS: You're saying that would overcomplicate this?

MR. PIERRE: No, I'm saying we didn't think of it.

MR. BROSCIOUS: How many people that are going to be -- trying to make an informed decision about whether you're doing the right thing here. They are going to spend months and months that it takes to get through all those ring binders --

MR. PIERRE: You are assuming --

MR. BROSCIOUS: -- and be lucky enough to find those itty, bitty, little paragraphs that are buried in there. They are not highlighted.

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There is not a place in there that tells me where to go to find the maximum concentration levels of the sample data for a given OU.

MR. PIERRE: Chuck, you're right. There are two sides to this. The other side is, how many people believe that we're going to take this stuff out, we're going to hide the data, and then we're going to just bury it on site? I mean, you have an assumption in what you're saying. You're assuming that we're not going to comply with the law.

MR. BROSCIOUS: It has already happened.

MR. PIERRE: But our proposed plan says we are complying with the law.

MR. BROSCIOUS: But they have done it in the past, in the recent past.

MR. PIERRE: Yes they have.

MR. BROSCIOUS: So don't.

MR. PIERRE: I'm only defending the proposed plan that my name is going on. That is what I'm defending, Chuck. I'm no defending what others have done.

MR. BROSCIOUS: I'm sorry, but your name goes on some of those other plans that --

MR. PIERRE: Which one?

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MR. BROSCIOUS: That don't meet the legal requirements.

MR. PIERRE: Any time you want to call me up and tell me about which ones, I would love to know about that because I don't know of anything.

MR. BROSCIOUS: The Warm Waste Pond certainly come to mind.

MR. PIERRE: The Warm Waste Pond did meet the legal requirement. Well, it's a different discussion, I guess.

Then we will have to talk about what law we're talking about.

MR. BROSCIOUS: We're talking about RCRA.

MR. PIERRE: The Warm Waste Pond was not hazardous waste.

MR. BROSCIOUS: Yes, it was. Yes, it was. I mean, we're tickled to death that, finally, you're willing to recognize the fact that you have mixed low-level waste there that has to be disposed of appropriately in a subtitle C repository.

MR. PIERRE: The Chem Waste Pond was identified as a hazardous waste site at TRA, not the Warm Waste Pond. The Chem Waste Pond is still there as far as I know. I don't know what they're

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doing.

MR. JENKINS: It's still there.

MR. PIERRE: I don't remember what they are doing with it, but it's still there. I don't want to get us side tracked on different discussions, which we can always talk off line on any of the other waste area groups. All we can talk about here is that one of the things that you do see in that proposed plan is a commitment to comply with the law. You do not see any waivers being requested in that proposed plan. We are not bypassing any of the requirements. That is all I can tell you. If we were going to bypass the requirement, we would be obligated to state it in the proposed plan. That proposed plan has no ARAR waivers in it.

MR. BROSCIOUS: Okay. My suggestion is that this has to be rewritten and you have to wait until you get further along the line with more sample data to the point that you can make specific commitments in your proposed plan as to more or less exactly what you're going to do and where the stuff is going to go and have it out there in something like this.

MR. RENO: Chuck, our commitment on this

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is we will resample the waste when we remove the SFE 20 tank. If it's TRU waste, then it will have to go off site, to a geological waste repository. If it's not, we will dispose of it in accordance with applicable regulations. Now, as to your feeling that we need to rerelease the plan, we're obligated to consider that.

MR. BROSCIOUS: But you need to say that in here. You need to give enough information to give people an idea as to what the extent of the problem is.

MR. RENO: Please hear me. I wish we were hearing this when we had to look at the draft as part of the focus group. And in hindsight, I wish that we had in there. I don't know I would agree at this point that this is a significant enough issue to rerelease the proposed plan. We haven't had anybody else express those concerns to date.

MR. PIERRE: For the record, we identified what were land disposal units and what weren't in the Federal Facility Agreement Consent Order, and that was a spin off of a Consent Order and Compliance Agreement, both of those I wrote. The fact is, of the operable units that were land

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disposal units, the Chemical Waste Pond is an LDU, the Warm Waste Pond was not.

MR. BROSCIOUS: What is LDU?

MR. PIERRE: Low Dispersion Unit. Sorry for the acronym.

MR. JENKINS: Okay. The last group I'm going to talk about are the buried gas cylinders. We have two sites. One located near the river and Lincoln Boulevard and other one about a mile to a mile and a half mile away from the facility.

In the case of Site 84 or the one near the river, this consists of gas cylinders that were disposed of in 1952. These were partially filled, emptied or damaged construction gas cylinders, acetylene, oxygen, carbon dioxide, those kind of molding gases.

In the winter of '57, '58 the area flooded. They were washed out and they were subsequently reburied. The other site, Site 94 consists of four low pressure gas cylinders containing hydrofluoric acid.

What we know is, in the case of the construction gas sites, we have somewhere between 40 and 100 gas cylinders in the site. In the case of the other site, we know there is four from what

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we can tell. We also know that we have a fire or an explosion potential based on the contents of the tanks.

What we don't know is exactly how much pressure is in the tanks or what, in the case of the gas -- the welding gas site. We're not exactly sure what type of gasses were buried.

But based on this, the agencies feel remedial action is warranted. This would allow us to deal with the safety hazard posed by past dumping practices.

For this group of sites, we looked at three alternatives. Again the No Action for comparison purposes. The second one being a removal treatment and disposal. This would essentially consist of excavating the cylinders, bleeding their contents into a treatment facility and disposing of the treated materials including the tanks.

The third one would be to construct an engineered multilayered cap over each of the sites.

Based on these issues, the agencies' preferred alternative is 2. Does anyone have any questions on that one?

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MR. BROSCIOUS: No.

MR. JENKINS: Well, with that I will turn you over to Scott Reno from the state who will talk about water issues. Oh, the gentleman in the back.

AUDIENCE MEMBER: It was welding tanks, that they already used?

MR. JENKINS: Yes.

AUDIENCE MEMBER: They had used these welding tanks up and kind of thrown them off to the side?

MR. JENKINS: They were used during the construction.

MR. RAUNIG: Some of them weren't empty, they were partially empty or valves were missing.

AUDIENCE MEMBER: So it's bad tanks or tanks that have been used up so that is the reason why they got rid of them, otherwise they took them with them if they were still good and full? So you guys need to pick them up and poke holes in the side of them?

MR. RAUNIG: Pretty much, yeah.

MR. JENKINS: Any other questions?

MR. RENO: All right. First of all, I want to thank you for joining us and for showing

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some interest in our project. I'm a native of this area. I actually went to kindergarten here in Moscow. I also attended my freshman year of college here as well.

When I come home or back to the area to visit family and friends, I'm disappointed that, really, there aren't more people around here that are familiar with what we do out at the INEEL and that there isn't going to be a greater interest when you do come up here.

But I appreciate the amount of time and effort that you put into this, Chuck. And, Jeff, your interest to come find out about this so you can tell the rest of the people in the region what is going on down there.

So, the key to understanding how the contamination moves in the subsurface and the aquifer is understanding the inter-relatedness of the perched water bodies and the aquifer itself. The contamination that is in the surface soils gets solubilized by water as it's moving through or migrating through the soils and is carried downward with the water as it moves towards the aquifer.

We have -- are you familiar with what perched is, Jeff?

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AUDIENCE MEMBER: Yes.

MR. RENO: We have three major zones where we find perched water at the Chem Plant. We find it at 110 feet below the surface. We find it at 140 feet below the surface. And we have another significant at 380, 420 feet below the ground surface.

There are other places where interbeds have been encountered and some of the wells that have been installed at the facility, but these are the three major zones where we find the water.

The aquifer itself is 460 feet below the ground surface at the Chem Plant, or on the order of 460 feet. The aquifer is about 250 feet thick. And we feel that there is a sedimentary interbed -- or if there is a sedimentary interbed half-way through the aquifer, about 110 or 120 feet below the water table.

Any questions? Not yet. So what do we know about these perched water bodies? We detected technetium-99, nitrate, neptunium-237, strontium-90 and tritium in these perched water bodies. We also detected some cobalt-60s and americium-241 as well.

The concentrations of strontium are

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fairly high, or very high, 500,000 picocuries per liter in the upper perched water body for the maximum detectable concentration, and that compares with the drinking water standard of 8 picocuries per liter.

Where does the water come from? Sixty to 70 percent of the water that recharges these perched water bodies comes from the service waste disposal ponds to the south of the facility.

If you look at the big picture down here, these are the percolation ponds down here on the south end. They receive 1 million to 2 million gallons of service waste water per day.

The Big Lost River, if you look on the big map here, you can see it how runs near the facility and -- let me find another good map here. There is a jog in the fence on the northwest corner of the facility because the river runs right past the Chem Plant. In fact, it's within 200 feet of the northwest corner of the Chem Plant. The river runs intermittently -- do I need to pick this up, Wayne?

MR. PIERRE: No-- unless -- are you interested? Go ahead.

AUDIENCE MEMBER: When it rains there

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is water coming through there and it goes underground.

MR. RENO: The river is an intermittent stream. It's a good question. It's mainly a function of how much snow pack the Lost River Range has received the previous winter.

On average, the river flows one out of every three years, at least on historical records, which go back 40 or 50 years. And, currently, or presently, the river is running year round. We have been in a wet period. It ran the year before, and the year before that.

We think that the amount of recharge on average that that contributes to perched water bodies is between 100 to 200 million gallons a year. But, again, highly variable. Some years it's zero and up to 24 percent of the total recharge to the perched water bodies.

Natural precipitation, rain and snow, particularly at the north end of the Chem Plant, the area of our greatest concern around this Tank Farm area is on the order of 4 million gallons a year of recharge.

We have leaking fire water lines we think attribute up to 12 million gallons per year.

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The sewage treatment plant, with the facility -- see, the infiltration is here. We think that contributes on the order of 25 to 30 million gallons per year. Down here we see the coal fire plant that powers -- or provides steam to power the facility, heat the facility. The steam distribution system has dry wells that collect the steam condensate and that is about 4 million gallons per year source of recharge. Interestingly enough, one of those dry wells that receives, I believe, it's on the order of half the plants steam condensation, the injection well is near Bin sets 1, 2, and 3, which is near some of our more highly contaminated areas.

The remaining sources of recharge is the landscape irrigation, which is up to 2 million gallons per year.

What we don't know is how to reduce this flux of contamination to the aquifer. And we do know -- or we do believe that the perched water is carrying contamination to the aquifer. It's fluxing to the aquifer presently. What we don't know is how much of this water needs to be eliminated from the system to stop this flux from impacting the Snake River Plain Aquifer.

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AUDIENCE MEMBER: I have a question. Why do they need percolating ponds to the south of the plant? Do you guys have to put water in them?

MR. PIERRE: I wonder if Bob could take that, if you wouldn't mind. And you may need the microphone. You may also want to talk about what opportunities exist, based on that need to reduce the amount of water going to the perc pond. I know that is a topic that I know Chuck is going to be interested in.

MR. JAMES: The perc ponds are the alternatives that exist for disposal of water. There is a large amount of water generated in cooling loads, which is the primary source of water, and there is other process loads and water that goes into the steam plant and inject and treatment of the steam plant water, the conditioning for the boilers, basically, that has to be disposed of.

The present scheme for disposal is by these infiltration ponds, which are regulated under the Idaho Land Waste Application Program. The current investigations indicate, like Scott was beginning to explain, the presence of even pure water would drive existing contaminants down into

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the aquifer. So in order to prevent this condition from continuing, we anticipate in this action to ban surface discharge of water within the zone of influence of the contaminants that are entering the aquifer underneath the Chem Plant.

The water can only be reduced -- economies will only be sufficient to reduce it to some degree as yet unspecified. There will still have to be some point of discharge unless they go to a completely enclosed system. In order to find out the optimum technique for water disposal, we're doing a trade study outside the CERCLA process because it is an operational issue, because it is an operational issue to get rid of the process water. We are performing a trade study in order to determine the most desirable way of water disposal or recycle. Options being looked at include perc pond replacement, surface water discharge.

MR. PIERRE: And the like for like, one of the reasons why it's discussed is because it's obviously the easiest solution in terms of the amount of engineering that is going to go into trying to have the significant.

MR. JAMES: Unlike CERCLA, almost all decision processes always have a do nothing or a

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baseline alternative to compare from. So an obvious solution is to use a similar disposal technique.

And then, anyway, there is a surface land application, NPDES or National Pollutant Discharge Elimination System program disposal, partial recycle and total recycle.

AUDIENCE MEMBER: About the percolation pond, you've got -- is it contaminated radioactive water and you guys throw it in these ponds to speed down through?

MR. JAMES: There is no direct connection between the contaminated material and the water they are exiting in the percolation ponds. There is some controversy regarding the quality of the discharge water. I myself do not know the answer.

MR. PIERRE: I think -- if the question is, is the water in the percolation pond radioactive? The answer is yes. Does it have the same level of types of contaminants? The answer is that the perc ponds came in -- right now, most of the hot stuff goes to PEW; right?

MR. JAMES: Right.

MR. PIERRE: If you explain, most people

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are not going to look at it as loading less. The basic question is, is it radioactive or is it not? Perc pond water has some tritium in it, does it not?

MR. JAMES: Absolutely, as does sea water.

MR. BROSCIOUS: Even though theoretically, maybe you can squeak legally by a current discharge at the pipe, what's going out there, that it meets regulatory requirements. It doesn't exceed some number -- I don't know what that is. But the thing is every time -- even those minor amounts they add to what is already down there exacerbates the problem.

But not only that, whatever you put in those perc ponds also contains leachate, all the other stuff that is bound up in the sediments in the existing pond and drives it down. It continues the problem. So the thing that needs to be done is not like for like, but you need to put in fully lined evaporation ponds that are not going to continue to load radionuclides into the perched water and, ultimately, the aquifer.

MR. PIERRE: And on that note -- and I would like Bob to talk a little more about the

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alternatives -- you already know where I'm going. This has to do with different programs run, different requirements. The scope of the work that we're doing here is to identify that the sources of water to the perched water that exists at the Chem Plant, which is very highly contaminated that Scott already mentioned, has to be stopped.

As far as future operations and the future discharge of water, whether it be to the Big Lost River or on the land is outside the scope of this Superfund and corrective action clean up. It goes to the scope of the permit process that would apply for the Department of Energy seeking a land application permit or seeking an NPDES permit. If, in that permit application, you believe -- because that also needs to go through public comment -- that the operational limits are not protective or inadequate, that is the process for dealing with it, but we have no control over -- the only control we have is to say the current operation can't continue, it's exacerbating the contamination of the Snake River Plain Aquifer and therefore it must stop.

But as far as what the solution is, is an operation control subject to an operating

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permit. It is outside the scope of this proposed plan. And what I just said is, basically, a summary of that type of comment in a responsiveness summary. We don't have the ability to control the NPDES, land application permit process. That is why those programs exist. And they control the operation.

MR. BROSCIOUS: But your shop does.

MR. PIERRE: I'm saying that what we are here for tonight for this document, while we're asking people to review and provide comments on it, is addressing the past history of problems and how to stop that. The future operational controls are through the operating permits that the state of Idaho, the Environmental Protection Agency, and DOE itself issues.

MR. BROSCIOUS: There is not the kind of public participation and components in those permits processes, that we may never hear about them. We may never have the opportunity to comment. We may not have the thing sent to us so that we can review them and get them back to you.

That is one of the rare good things about CERCLA is that you're required to be here.

MR. PIERRE: NPDES -- and I don't know

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the land application, but I know that Scott is going to be checking on that. Most permits, most government agencies have to -- at least federal agencies have to, by law, preface their decision-making with public input. That is an obligation that the federal agencies have, and, I believe, state agencies.

AUDIENCE MEMBER: So all this stuff that you have proposed in here is nuclear waste, and it's going to cost $170 million?

MR. JENKINS: If all of the preferred alternatives we're proposing were selected. That is the total. There would also be some savings in combining the project management costs. The cost of each one is if all the others were No Action, but one got selected. So the project may even cost in that number, kind of get counted several times, but we would be able to significantly reduce that from the $175 million.

AUDIENCE MEMBER: I had a question for Chuck. If you guys did all your clean up and did everything, basically, they would still be operating this site, doing the same thing, and they still would be pumping this nuclear waste water into the percolating pond, which would be

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it. That is what the model indicates. We will look. We will watch the drain out and see what happens and take the additional steps as necessary to make sure that we will eliminate these perched water bodies. Okay.

MR. BROSCIOUS: It's impossible to eliminate those perched water bodies given what is going on there.

MR. JENKINS: I don't agree with that. It's impossible to eliminate every drop of water, but it's not impossible to eliminate there being enough water to create a perching zone in the subsurface. We can do it.

You can disagree with me on that, Chuck. That's all right. But we can do it.

MR. BROSCIOUS: You give me the permission to disagree.

MR. JENKINS: Now, Alternative 3 -- is Jeff leaving?

MR. PIERRE: No, he was signing in.

MR. JENKINS: Alternative 3 includes all the elements of Alternative 2, in addition, it provides to physically remove as much water as we can from the subsurface and to treat it and dispose of that waste water somewhere else. The difference

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in cost between the two is that it's -- let's see, it's $20 million for Alternative 2. It's $260 million or nearly $260 million for Alternative 3, which incorporates the additional pump and treat alternative.

I do want to point out that in your proposed plan, page 35, there is an error in that cost estimate in the table. There is a side bar on that same page that has correct cost and present value. That was a typographical error.

Now, to install wells and physically remove that water, I look at the swimming pool scenario, or the bathtub. If you have everything draining to one nice spot that you can stick a pipe in and pull that water out, you can recover a good share of that water.

In the case of what is going on in the subsurface, we're encountering interbeds at various intervals. Interbeds may not be -- I mean, they are not continuous in places across the facility. There are probably small lenses that are present here and there that we haven't even encountered in the wells that we have drilled. There is probably some perching occurring there.

And the interbeds that we do know, we

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have different elevations across them. There is probably emulating surfaces, so to place wells in and to remove 100 percent of that water is very difficult. Now, the other issue is associated with even if you did remove all the water that is there and remove the recharge sources, there are absorption coefficients associated with these radionuclides.

The radionuclide of our greatest concern in there is strontium-90. The strontium-90 has a absorption coefficient or heat KD between 12 and 24. That means that 1/12th of the contaminant mass is present within the water and the other 11/12ths or 23/24ths is present in absorption of soils. So if you pump that water out, you still have only removed 5 to 10 percent of that contaminant mass.

We do not feel that trying to do this was worth the extra value added, that the monies that are available to address problems at the INEEL could be better spent elsewhere and our best alternative was Alternative 2, which was simply to remove sources of recharge, let the contaminant decay out in the vadose zone and let the perched water that is there drain out.

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Jeff had a question.

AUDIENCE MEMBER: I was wondering what you do with the water once you pumped it all out, what would you do with the water, because it's going to rain, and, obviously, recharge. There is water going back in there. I mean, you want to pump out the radioactive water.

MR. BROSCIOUS: The idea is not to just pump it out but to treat it and remove the radioactivity and any other contaminants in it before releasing it again. So, theoretically, you would be able to filter out, in some way or another, through ion exchange or whatever, to get the contaminants out.

AUDIENCE MEMBER: And pump it back in. A big filtration system for that entire area.

MR. BROSCIOUS: That's what they're doing up at Test Area North only --

MR. PIERRE: It's organics, primarily, that's driving it. I presume you're not suggesting that we tie to treat the tritium, though, am I right? Safe Drinking Water Act does not require you to do it.

MR. JENKINS: Do you have any other questions on perched water group? Chuck, can we

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move on? We can come back and try this all up.
MR. BROSCIOUS: Before we leave it, back to what we were talking about earlier this afternoon, in terms of the one option of -- or that had the 46 million gallons and you showed me -- and somebody showed me the table that there was a decreasing amount that initially was a large amount that would decrease over time, that it wasn't a 5,000 gallons-a-day kind of a thing as if you averaged it out over 25 years.
But the point is, it comes back to the original assumption, if can you get an even higher yield out of year one, then even the 5,000 gallons, then you have to include that in your risk assessment. I mean, it doesn't matter whether you get necessarily 5,000 gallons a day over 25 years, if can you get 5,000 gallons in the first year or more -- which, actually your table would suggest that, then you have to assume that that perched water is available and it has to be included in your risk assessment. You can't arbitrarily discount it.
MR. PIERRE: Your risk assessment does.
MR. RENO: We don't account for the perched water as a source of drinking water per se,

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because we feel that under our scenario, which is residential use, that the plant has to be gone. And that it's returned to natural sources of recharge and all the man-made sources are gone. The modeling indicates that at that time there is not enough water that would be available to support a drinking-water well or a well.
MR. BROSCIOUS: Somebody thought that there was, inasmuch as that alternative is out there, and you even worked out the numbers.
MR. RENO: How we did evaluate it in the risk assessment is --
MR. JENKINS: Can I pipe in?
MR. RENO: Let me finish.
MR. JENKINS: Scott --
MR. RENO: I'll come back to you, Talley. We did evaluate that source and the risk assessment and what we evaluated was the impacts of that vadose zone migration of contamination to the aquifer and its future risks to somebody who might use that migrated contamination and the existing aquifer contamination.
MR. BROSCIOUS: From the aquifer but not the perched water.
MR. RENO: Talley, if you want to

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elaborate.
MR. BROSCIOUS: You understand my point is that you need to --
MR. RENO: I understand what you're saying.
MR. BROSCIOUS: -- you need to incorporate the perched water.
MR. RENO: Do you think that we should consider the perched water to be a usable drinking water source?
MR. BROSCIOUS: That is exactly it.
MR. JENKINS: What I was going to say is when we did the evaluation on the pumpable amount of water, that was not as a domestic water supply. That was to see what could be done in the way of restoration of the aquifer, the Snake River Plain Aquifer, and that it was to assess what additional benefit or reduction in contamination loading to the aquifer would happen, not necessarily what the impact would be on a drinking water supply.
MR. PIERRE: Let's talk, again, as far as when we had the discussion on where the 10 feet came from. We need to have a discussion on what it is that we're trying to protect against. It is our understanding, the data indicates to us

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that the perched aquifer only exists because of the amount of pumping and recharge that DOE is doing, that if DOE was not doing that recharge, the perched aquifer would not exist, would not be a drinking water supply for future residence. The Snake River Plain Aquifer would be. Therefore, our goal is to restore the Snake River Plain Aquifer within a reasonable time frame. Reasonable, based on evaluation, discussions with others, Citizens' Advisory Board, et cetera, is 100 years. The same scenario that is used at Test Area North.
So what you're seeing is logical and makes sense to us, based on the premise that the perched aquifer, at this future time frame, as both Scott and Talley said, would not be existing. If a person put in a well, they would not get pumpable water because the perched aquifer would have been gone. But our objective is to -- and that alternative is looking at the perched water as leaching contaminants into the Snake River Plain Aquifer. And rather than just allow the perched water to dry up naturally, a more robust technology is to help it along its way by pumping it. That is the alternative that you're seeing.
MR. JAMES: Wayne, isn't it also true

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that the existing controls are fully protective until such time as the aquifer -- the perched water is completely done?

MR. PIERRE: Actually, for a baseline risk assessment, what is existing is meaningless. So for any discussion that we make, because there is an nonacceptable risk in the Snake River Plain Aquifer, we would place institutional controls. That is the distinction between Alternative 1 that exists in the proposed plan, which is we can utilize existing controls, but if they went away, it would be okay, versus Alternative 2 on some of these, which says we will insist that those institutional controls are in place and operating.

So what you're seeing, Bob, is a distinction between the baseline risk assessment that does not take into account existing institutional controls.

I don't know if this helps or not, Chuck, but what we're trying to do is explain we are working toward the objective that we believe must be met in order to have an acceptable risk. I don't think that we're in total agreement on whether or not those objectives -- that our objectives are fully as comprehensive as you

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believe they should be. What we are trying to show you is that we are working towards the objectives that we believe are necessary.

MR. RENO: Okay. Let's talk about the aquifer. We will loop this all back. As you know, Chuck, the primary source of contamination to the aquifer from the facility is from the CPP service waste disposal well, which operated from 1952 to 1984, routinely. It was used a couple times sparsely until 1989, then it was permanently pressure-grouted shut, the 300 pounds per square inch with concrete in 1989.

And the history of this goes over some 23,000 curies of tritium were disposed of through the well on the order of 7,000 curies of strontium-90, and one curie of iodine-129 or on the order of one curie. Then there was some mercury that had gone down the well that also was a constituent of concern. Other constituents could go down the well that are not at risk-based levels of concern that do not result in an exceedence of drinking water standards.

One of which is of interest to some people, in 1974 the inventory reports a half a curie of plutonium could that have been disposed of

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through the well. It's near detection limits. It was as high as a couple picocuries per liter in the late '70s, but it's down to near detection limits. The wells that they have seen that in are on the southwest corner of the plant.

Now, to tie the perched water and the aquifer issues together, if we look at this map here, this outside line corresponds to the peak strontium-90 isoconsentration contour line. In the aquifer as depicted in the wells. The area within that circle is higher than the drinking water standard, the areas outside is below drinking water standards for strontium-90.

MR. BROSCIOUS: What are the highest levels of strontium-90?

MR. RENO: I believe they are on the order of 75 picocuries per liter.

MR. JENKINS: Yes, that's correct.

MR. RENO: Monitoring Well 18.

MR. BROSCIOUS: That fact should be in the plan. I think people should know that.

MR. RENO: Comment noted.

This is the tritium plume. The outside line corresponds to the 20,000 picocuries per liter drinking water standard contour. This is the

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Central Facilities Area, about three miles south of the Chem Plant. This is to the site boundary from the disposal. It's about 8 miles to the INEEL boundaries.

Now -- oh, the highest tritium that's been measured in this plume, I believe is on the order of 35,000 picocuries per liter, most recently in your RI/FS. Do you disagree with that?

MR. BROSCIOUS: I think it was around 75.

MR. PIERRE: Actually, do you remember the highest tritium concentration?

MR. JENKINS: I think there was some in the first water around 70- to 75,000 in the aquifer. I think it's down to around 35, 40, maybe, tops.

MR. PIERRE: 20,000 picocuries per liter is the maximum contaminant level under the Safe Drinking Water Act.

MR. RENO: All right. In the case of our strontium-90 and our tritium, as you know, they are both fairly mobile radionuclides in water, and they both have relatively short half lives. Strontium-90 is 29.1 years. The tritium is 12.3 years. Because of that, due to dilution dispersion

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and radioactive decay, these lines, which correspond to the drinking water standard, a contour line has been moving steadily back towards the Chem Plant since 1984 when the injection well was taken out of routine service for both of these contaminants.

Now, we think that this trend is not as pronounced as it was initially, and that we're approaching a quasi-static equilibrium where the contamination entering the aquifer from the perched water is increasing the contaminants nearly as fast as it decays away.

Now, in the case of iodine-129, the contaminant has a 15-million-year half life and therefore becomes a long-term, persistent problem in the aquifer. The only means of attenuation that occur are dilution and dispersion.

MR. PIERRE: Would you state the MCL for iodine-129 also?

MR. RENO: The MCL, the drinking water standard, 1 picocurie per liter -- actually, the standard is 4 millirem per year, gross beta gama, and the concentration of iodine-129 that corresponds to that under the current dose conversion methodology, specified in the Safe

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Drinking Water Act, or in the National Public Drinking Standards, is 1 picocurie per liter.

Of note, the proposed standard uses a different dose conversion methodology, and it's been proposed since 1991. We're not using that proposed standard, but just like for comparison, that is 20 picocuries per liter of that other dose conversion methodology that was used.

The highest concentrations of iodine-129 that we're seeing in the aquifer of late are between 3 and 4 picocuries per liter. I believe the number is 3.8 as you noted in your comment.

Now, the iodine -- this is the line which corresponds to our drinking water standard as of 1991 data. Again, the Central Facilities Area here, the modeling indicates that that 1 picocurie per liter contour line will continue to expand until it comes near the INEEL boundaries in about 30 years and then do dissolution, dispersion, but not decay, it will begin to recede back.

Now, the iodine-129 has left the INEEL boundaries. It's on the leading edge of the plume, but it's well below any risk-based or regulatory level of concern.

MR. BROSCIOUS: It's about 8 miles.

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MR. RENO: Right, it's 8 1/2 miles.

So what do we know? We know that the aquifer is a sole-source aquifer. It's the major -- or the primary source of drinking water for people living on the Snake River Plain. We have three radionuclides, contaminants of concern, strontium-90, the tritium, and the iodine-129, and mercury, which we believe -- we don't see it in any of our wells. We believe it's confined in the immediate area of the old disposal well.

I might note for you, Chuck, that the modeling under the conservative -- what we think are conservative parameters for plutonium transport would indicate that we may have a plutonium problem from the soils in the Tank Farm migrating to the aquifer 800 years in the future if no action was taken. That will be addressed under the final Record of Decision. Hopefully, we have some better data on the actual plutonium transport to the aquifer.

What the preliminary modeling indicates is they are using a KD of 22 where we would have a peak concentration of plutonium isotopes for 36 picocuries per liter 3,000 years from now with no action.

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Okay. We have not measured any plutonium in the perched water to date. We don't know if all these 110 zones, perched waters, are ideally located to find plutonium, but we're going to do this in OU 3-14 RI/FS.

MR. BROSCIOUS: The likelihood is pretty darn high with the gross alpha readings though.

MR. RENO: Well, I don't doubt that. Although we discussed some of the gross alpha read in perched water bodies doesn't correspond to concentrations of alpha-emitting isotopes that we analyzed for. One of the reasons is in water, water media that has a very high gross beta concentrations, that there is carryovers in the detectors that some of the beta may be counted as gross alpha, so there is speculation -- and we don't know for sure, but we think that some of these high gross alpha numbers are spurious data or questionable. However, we will treat them in the eventuality that there is actually something there. Okay. All right.

The model says that we're going to have iodine-129 slightly exceeding the drinking water standard of 1 picocurie per liter 100 years from now if we take no action. Our model says tritium,

is a relatively short half life, will be well below the MCLs and our strontium-90 will be at the drinking water standard 100 years from present.

So we asked the Snake transport model what is the highest concentrations of iodine-129 that we can see in the aquifer today that would not present a problem for us. When we think this aquifer may be available or potentially be available for other uses. That answer is 11 picocuries per liter. If we go back to the highest concentrations of iodine-129 measured in the aquifer, as you noted, 3.8 picocuries per liter in the recent data, that sample was taken from an open interval well. Given that there may be other zones within that well that may be relatively cleaner water, there may be mixing going on and dilution of that number. So what we're proposing to do is to go out -- I will go ahead and jump to Alternative 2B to follow up on this and to install five new wells near where that hot spot is expected to be and to sample those wells at 15-meter depth intervals from the top to the bottom of the aquifer.

If we have an exceedence of this 11-picocurie-per-liter action level over four

quarters of monitoring, then that would trigger us to implement a contingent active remediation upon that localized hot spot; that is, we would try to pump from that zone that was exceeding the drinking water standards or exceeding the 11-picocuries-per-liter targets or action level.

Alternative 3 also relies on that contingency through the same method of monitoring, but the approach towards addressing the contamination would be a more traditional pump and treat, which would pump water out of the entire column of the aquifer rather than targeting a zone. For instance, our interbeds that are in the aquifer. The difference in cost is 40 million for Alternative 2B and 788 million for Alternative 3. The other two alternatives, one is no action with monitoring. We don't consider that to be adequate. Alternative 2A would have institutional controls monitoring -- and the source control portion of the remedy is a combination of the perched aquifer alternatives, and that is eliminating the ongoing flux of contamination of the aquifer. Okay.

With that, let me make a couple quick comments -- Erik is gone so I guess I will

facilitate a question and answer period.

MR. PIERRE: I would like to suggest is that as you wrap this up that we invite -- and, Chuck, I presume that have you a prepared statement, or want to read in, if nothing else, the page that you have given copies of. Then after that we go through other questions and answers. So that in the interest of time, so you can get your positions formally on the record.

Chuck, is that the way you would like to do it?

MR. BROSCIOUS: That's fine.

MR. PIERRE: So with that, why don't you ask if there is anyone that would like to give a formal comment.

MR. RENO: First of all, the decision hasn't been made. Okay. We need to know what you think before we make a decision and issue a Record of Decision.

We want to hear from you. This comment period is going to close on December 22nd, so we need to hear from you by then. We expect to issue the Record of Decision next summer and, essentially, to get to work right away on designing the remedies.

FORMAL PUBLIC COMMENT

AUDIENCE MEMBER: Chuck Broscious, B-r-o-s-c-i-o-u-s, executive director of the Environmental Defense Institute, Troy, Idaho.

The proposed plan is certainly an improvement over the draft plan, and I think that points to the usefulness of including the public and the stakeholders earlier in the process, so as to try to encourage ironing out problems prior to getting into a formal thing that gets out on the street, and by that time most everybody is kind of into a locked position of what they've decided, they present it, and then they defend it. I think the draft thing was very useful, and I hope it continues.

Obviously, one of the more important things within the current plan that is a departure from the draft is a commitment to construct the subtitle C RCRA compliant repository. That is a major step forward, and we're very encouraged by that.

This has been a long on-going process to try to get the agencies, all the agencies to

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correctly characterize the waste that they are dealing with because at that very fundamental level, if that doesn't happen, then whatever flows from that, in terms of remediation or whatever, is not going to meet the basic requirements. That is what we've seen in the past where that fundamental classification of that waste was not made and consequently, the disposal actions, in our view, were illegal.

And we're very concerned about the Tank Farm soils even though that decision is yet to be made in view of what we see in the plan of how the agencies are unwilling to belly up to the bar and say, you know, what available data we have indicates that this is transuranic waste? We need to do more sampling, but this is what we know at this point. And if it is, if subsequent sampling data acknowledges the previous sampling data, then it will have to go to a transuranic, deep geologic repository. You don't say that it might be buried on site. You just don't say stuff like that if you want public confidence in your decision making.

As far as excluding the gravel pits, I'm sorry, it's in your site treatment plan as mixed low-level waste. And you simply cannot walk away

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from it. You know, you have to deal with that as RCRA listed waste. The same goes for the flyash and the sewage lagoons. I mean, you're writing those off as no-action sites. You may have other reasons for doing that, but you're not putting them on the table, and you're not making a convincing argument, at least to us, the public, that that is a defensible position.

We've talked about the other surface soils. And in the plan, again, there is a limit, in writing, of 10 feet. You've told us otherwise here orally, but what we go by is what is in writing and what we can cite, so there needs to be -- I think the whole plan needs to be written, rewritten, and resubmited to show your true intent about what you're going to do with this stuff and that you're not going to stop at 10 feet just because it's 10 feet. You're only going to stop when you reach a level that won't continue to impact the perched water or the aquifer below or whatever global limitations you've got there.

As for the INEEL CERCLA disposal facility, the thing is that the Chem Plant is recognizably within the 100 year flood plain. The Chem Plant, as a facility, is damn near like a

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table top, and it doesn't have much elevation change from the north end to the south end. And you're going to have a disposal facility that most likely is going to be subsurface. In that case, you're going to be at an elevation that is going to be vulnerable to flooding even within the 100-year scenario.

If you decide to put it on the surface and berm over it, we find that unacceptable because of the potential for future erosion over the long term. The thing is that additional scenarios need to be considered with respect to flooding. And the USGS 50-year flood -- let me back up. The 100-year flood assumes 7,260 cubic feet per second in the Big Lost River. The 500-year flood assumes 9,680 cubic feet per second, which is 34 percent more. And the likelihood that the entire area of the Chem Plant would be flooded is almost a given. This has come from USGS hydrologists that have done those studies. So the idea of putting -- of locating, of siting that particular dump in that region is just purely ludicrous. It makes no sense at all.

The logical thing, from our point of view, is to site the thing off the aquifer but on

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the INEEL real estate. And there are sites at the base of the Lemhi Range where the Lemhi kind of terminates at the Snake River plain. It's not perfect. There is still -- that is still within an area that is recharging the aquifer, but it is off of the aquifer. It gives a little bit more distance, and it's not in a flood plain. So I think there are other locations for that particular facility that need to be included. And there are studies that DOE has done on trying to find disposal sites for -- actually, it was for spent nuclear fuel, but it's the same kind of concept of looking for a place that is off the aquifer.

I think I've already covered, but I will restate the idea of the SFE 20 waste, again, wasn't really adequately characterized in the plan for what it is or what information you have what it is.

You know, generally, this document, as most of all the other documents that have come out, basically, does not give the kind of basic information that a member of the public could make an informed decision about whether, you, as agencies, are really addressing the problem. There is -- you know, it doesn't have to be complicated.

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The readers of our newsletters seem to get the idea, and we present the information that you don't present, and it can be done. It doesn't have to be rocket science stuff. That's enough for one night.

MR. PIERRE: Thank you.

MR. BROSCIOUS: And who is the official recipient of this?

MR. PIERRE: With that, though --

MR. BROSCIOUS: I'm submitting a written comment.

MR. PIERRE: Again, as you can see in the back of that proposed plan, it is postage paid, so you can just fold it up and turn it into comments. But if you feel there is something that you'd like to say tonight, feel free.

MR. JONES: My name is Jeff, J-o-n-e-s. I think it's great that you guys are going out and trying to spread to the public and get the public involved and let them know what's going on.

I'm kind of disappointed about the turnout here, that more citizens haven't shown up other than Chuck. I don't know how the advertising went. But it looks awesome that you guys are

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working on this. And it's something that needs to be dealt with.

I was kind of concerned about the percolating ponds, that they will still be running and that there might be contaminants in them flooding or going into our aquifers, so even after all the money and time and effort spent on this, you might still have contamination in the aquifer even after you clean up all the rest of the materials on the surface and under the ground and monitor, and we still might have problems.

I just wanted to put that on the record that I had a couple concerns about the ongoing work of the plant after the cleanup and continued waste put into our environment and our aquifers.

MR. BROSCIOUS: Thank you.

MR. SIMPSON: Jeff, just for the record, the comments that you and Chuck made tonight will be responded to in the responsive summary section in the Record of Decision. And I'll make sure that you get a copy, being that you submitted comments.

With that, I would just like to mention that the next two proposed plans that will be coming out will be Waste Area Group 4, which is the Central Facilities Area. It's in the south central

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portion of the INEEL, and then also Waste Area Group 5, which is the Power Burst Facility Auxiliary Reactor Area. And those plans should be coming out in the late spring.

So, with that, thanks for your participation.

(Meeting concluded at 9:35 p.m.)

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STATE OF IDAHO)
) ss.
County of Ada)

I, NANCY SCHWARTZ, a Notary Public in and for the State of Idaho, do hereby certify:

That said hearing was taken down by me in shorthand at the time and place therein named and thereafter reduced to computer type, and that the foregoing transcript contains a true and correct record of the said hearing, all done to the best of my skill and ability.

I further certify that I have no interest in the event of the action.

WITNESS my hand and seal this 30th day of December, 1998.

Nancy Schwartz, Notary Public in and for the State of Idaho

My commission expires:
September 28, 1999

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